ABSTRACT

A multi-dimensional copolymer array of a plurality of copolymers, polymerized from at least two independently variable sets of monomers, wherein the polymerization is characterized by:

5   (a)   selecting a first homologously varying series of monomers with non-varying polymerizable functional groups;

         (b)   selecting at least one additional homologously varying series of different monomers having non-varying polymerizable functional groups that are reactive with the polymerizable functional groups of the first

10   series of monomers to form copolymers; and

         (c)   separately reacting a plurality of monomers from the first monomer series with a plurality of monomers from each of the additional monomer series to form the plurality of copolymers;

         wherein the homologous variations of the monomer series are

15   selected to determine the effect of independently varying at least two different structural features of the copolymer on at least one end-use property of the copolymer.

         Methods for determining the effect of independently varying at least two different structural features of a copolymer and at least one end-use

20   property of the copolymer are also disclosed, in which at least one end-use property of each copolymer of the plurality of copolymers is measured and the variations in each end-use property measured for each of the copolymers is compared as a function of the homologous variation within the monomer series from which the copolymers were polymerized to determine any relationship

25   between the homologous variations and the end-use property variations among the copolymers. The method is useful for identifying members of a plurality of copolymers having useful properties for specific end-uses.

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